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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/527,650	09/23/2005	Gary D Spinks	930058-2003	7112

7590 10/27/2009  
Ronald R Santucci  
Frommer Lawrence & Haug  
745 Fifth Avenue  
New York, NY 10151

EXAMINER
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SYKES, ALTREV C

ART UNIT	PAPER NUMBER
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1794

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10/27/2009

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/527,650	<b>Applicant(s)</b> SPINKS, GARY D	
	<b>Examiner</b> ALTREV C. SYKES	<b>Art Unit</b> 1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 03 August 2009.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-42 is/are pending in the application.
- 4a) Of the above claim(s) 18-38 and 42 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-17, 39-41 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on July 6, 2009 has been entered.

### ***Response to Arguments***

2. Applicant's arguments filed November 24, 2008 have been fully considered but they are not persuasive.

Applicant argues that the term “security thread” refers to discrete relatively large threads that are embedded into a finished paper product, whereas the terms “security fiber” refers to fibers which are generally much smaller than threads, and are randomly distributed throughout a paper product, with those fibres being introduced during the paper making process. Applicant argues that security threads are typically made out of metal foil or plastic or “synthetic tear-proof” material.

Examiner is not fully persuaded by the argument. Examiner notes that a security thread in the very least would comprise security fibers as the textile art recognizes a thread to be composed of entangled fibers. (See Col 7, lines 21-26 of Tam et al. US 7,122,248)

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Additionally, examiner notes that security threads may have varying widths as explained in the extract from the Arjo Wiggins website provided by applicant. (See applicant Document 2) Therefore, while one of ordinary skill in the art would appreciate that a thread would have a larger diameter than a fiber because of its make-up, it would also be well within the ordinary skill of one in the art to tailor that width for end product use to increase the level of counterfeit difficulty. (See applicant Document 2) Regarding the distribution of fibers versus threads in paper products, examiner notes that Boehm discloses in one embodiment that one need not worry about constant orientation of the security thread during embedding. (See Col 5, lines 9-11) Additionally, Kaule discloses a security thread wherein in the case of money-value paper, the introduction of threads into the paper pulp may be controlled during manufacture. (See Col 3, lines 60-67) Therefore, examiner notes that security threads may also be randomly distributed throughout the paper product. Further, Kaule discloses the security threads are made of synthetic polymers such as polyamide. (See Col 3, lines 8-15 and Example 1) Therefore, examiner is not persuaded that typically security threads are made out of metal foil or plastic or "synthetic tear-proof" material.

Applicant argues the thread of Boehm is formed of the synthetic tear-proof carrier material, with ink thereon.

Examiner is not persuaded. Boehm is not explicit as to the material which makes up the security thread and there is not suggestion that the "synthetic tear-proof carrier" is

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anything other than a carrier material. Additionally, Kaule discloses the security threads are made of synthetic polymers such as polyamide. (See Col 3, lines 8-15 and Example 1) Kaule also discloses the use of synthetic materials suitable for the carrier film. Kaule discloses security threads can be removed from the carrier film after lamination and wound onto spools separately. (See Col 6, lines 58-66) Therefore, one of ordinary skill in the art at the time of the invention would understand that the carrier material of Boehm in no way is used to describe the actual thread.

Applicant argues that the Boehm security threads are different from the instantly claimed security fibers since Boehm discloses providing a security paper wherein the thread runs from edge to edge. Applicant argues that the fibers of the instant specification are smaller than threads.

Examiner notes that a prima facie case of obviousness exists to randomly distribute the fibers in the paper since the reference teaches in one embodiment that one need not worry about constant orientation of the security thread during embedding. (See Col 5, lines 9-11) Additionally, Kaule discloses a security thread wherein in the case of money-value paper, the introduction of threads into the paper pulp may be controlled during manufacture. (See Col 3, lines 60-67) Therefore, it would have been obvious and well within the ordinary skill in the art to utilize the combined references to arrive at applicant's claimed invention. Regarding the arguments about the size of the fibers

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utilized by applicant, examiner notes that those limitations are not recited in the instant claims.

Applicant argues that Boehm does not suggest the instantly claimed fibers. Applicant argues that Kaule does not cure the deficiencies of Boehm since they are both directed to security threads. Applicant argues that Tillotson is concerned with a method of treating coloured yarns which are clearly different from paper security fibers.

Examiner is not persuaded and maintains the position as set forth above regarding the Boehm and Kaule references. In view of Tam et al. US 7,122,248, examiner notes that the definition of a thread as disclosed therein would also relate to a yarn as taught by Tillotson. Therefore, a prima facie case of obviousness exists for one of ordinary skill in the art at the time of the invention to utilize the printing technique of Tillotson on the security threads of Boehm in order to modify the colored portions successions as disclosed in Boehm.

Finally applicants argue that Whitehead is concerned with paper containing fibers made from an organic ester of cellulose. Thus the fibers are soluble in a solvent that does not dissolve paper and the fibers are therefore not made of paper. Therefore, the Whitehead reference does not cure the deficiencies of Boehm.

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3. Examiner is persuaded and the rejection of claim 17 under 103(a) as being unpatentable over Boehm in view of Whitehead has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of newly found prior art.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. Claim 1, 2, 4, 7, 13, 15, 16, 39 and 41 is rejected under 35 U.S.C. 103(a) as being unpatentable over Boehm (US 4,897,300)

Regarding claims 1, 39 and 41 Boehm discloses a security thread provided with luminescent colors that are invisible in normal lighting and are provided along the security thread in successive and overlapping portions which, when the colors are

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excited, have a length recognizable to the naked eye and, each printed with different luminescent colors. (See Col 1, lines 4-7 and 52-58) The corresponding security paper need only be exposed to UV radiation. (See Col 2, lines 25-30) In UV light, the formerly colorless, inconspicuous security thread suddenly acquires an intensely colorful effect. (See Col 2, lines 44-47) The security thread that is printed with luminescent colors may be produced in the normal manner, i.e. by printing strip shapes on flat sheets and then cutting them up. (See Col 4, lines 56-58) It is also possible to print on individual threads. (See Col 4, lines 58-59) Additionally, Boehm discloses if carrier material is transparent, one need not worry about the constant orientation of the security thread during embedding, since the emitted colors are also recognizable from the back of the security thread through the carrier material. (See Col 5, lines 9-13) If an opaque carrier material is used, however, one must make sure the security thread has constant orientation in the paper if the fluorescent effects are to appear on the same side in all security papers; otherwise the carrier material must be printed on both sides. (See Col 5, lines 13-19) Therefore, it is noted by examiner that it would have been obvious and within the ordinary skill of one in the art to provide a coating (i.e. printing) of the luminescent colors to the fiber that would be sufficient to act in the same manner as claimed by applicant in order to provide for the result as disclosed by Boehm of having luminescence seen from both sides of an embedded fiber. While it is noted that Boehm does not specifically disclose a fiber, it is well known and understood in the art that threads are made from fibers. Therefore, one of ordinary skill in the art would have expected that the



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fibers of the thread of Boehm would also exhibit printed regions on their front and rear sides wherein the regions would be colored and visible only under ultraviolet light.

As the structure of Boehm has been shown to be similar to that of the structure as claimed by Applicant, it is presumed that the prior art can do whatever is claimed since the similarity is prima facie obvious. As such, it is noted that the printed thread of Boehm is also suitable for mixing with slurry paper pulp for paper formation since the reference is explicit to providing security paper.

Regarding claim 2 Boehm discloses said regions are striped regions and said striped regions include two or more differently coloured striped regions. (See Figure 1, Col 3, lines 49-56 and Col 4, lines 55-60)

Regarding claim 4 Boehm discloses the coloured striped regions appear in the same order in a repeating pattern. (See Col 3, line 49-56)

Regarding claim 7 Boehm discloses said striped regions include three or more differently coloured striped regions. (See Figure 1 and Col 3, lines 29-38)

Regarding claim 13 Boehm discloses the regions are printed such that regions on the front and rear sides are in register with one another and have the same colour. (See Col 5,

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lines 4-18 wherein the emitted colors are recognizable from the back of the security thread)

Regarding claim 15 Boehm discloses the fibre is cut from a larger fibre. (See Col 4, lines 56-60)

Regarding claim 16 Boehm discloses wherein a varnish is applied to the outer surface. (See carrier material Col 5, lines 4-18)

7. Claims 1-7, 13-16 and 39-41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Boehm (US 4,897,300) as applied to claim 1 above, in view of Kaule et al. (US 4,756, 557).

Regarding claims 1, 2, 39 and 41 examiner maintains the position for the Boehm reference as set forth above. However, the reference does not disclose said fibre comprises regions of color which do not overlap. Boehm further discloses one can select the succession of the colors in particular so as to produce the order of colors in the natural spectrum. (See Col 2, lines 4-7)

Kaule et al. also discloses a security document having a security thread embedded in the interior of the document visible in transmitted light. (See Col 1, lines 8-14) In a preferred embodiment, at least three stripes extending lengthwise on the thread and arranged

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exactly parallel to each other, which differ in terms of their physical behavior, for example their color, their fluorescent or their magnetic properties. (See Col 2, lines 35-40) They are arranged in a clearly and precisely defined correlation with one another in longitudinally parallel areas which are sharply delimited from one another. (See Col 4, lines 58-61 and Figure 2) Kaule also discloses the use of synthetic materials suitable for the carrier film. Kaule discloses security threads can be removed from the carrier film after lamination and wound onto spools separately. (See Col 6, lines 58-66)

As Boehm and Kaule et al. are both directed to security threads having UV luminescence, the art is analogous. Therefore, one of ordinary skill in the art at the time of the invention would have been easily motivated by expected success to utilize the regions specifically as taught by Kaule et al. which do not include overlapping regions with the desire to tailor the fiber with explicit test criterion for authenticity. (See Col 2, lines 50-64)

Regarding claim 3 modified Boehm fails to teach said striped regions are placed at about 1 mm gradations. It would have been obvious to one of ordinary skill in the art at the time the invention was made to optimize the region distances since it has been held that, where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation. *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955). The burden is upon the Applicant to demonstrate that the claimed region distances is critical and has unexpected results. In the present invention, one would have been motivated to optimize the striped region

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distances motivated by the desire to use the measurement of the width of the individual areas and the distances there between as another test criterion for the authenticity of the security threads. (See Kaule et al. Col 2, lines 50-64)

Regarding claim 4 modified Boehm discloses the coloured striped regions appear in the same order in a repeating pattern. (See Figure 4b and Col 5, lines 47-65)

Regarding claim 5 modified Boehm discloses only two striped regions, wherein the first striped region having a first colour and the second striped region having a second colour. (See Figure 4a and Col 5, lines 43-46)

Regarding claim 6 modified Boehm discloses each of said striped regions covers half of said fibre. (See Col 4, lines 62-65 and Figure 4a)

Regarding claim 7 modified Boehm discloses said striped regions include three or more differently coloured striped regions. (See Figure 4c and Col 5, lines 65-67)

Regarding claim 13 Boehm discloses the regions are printed such that regions on the front and rear sides are in register with one another and have the same colour. (See Col 5, lines 4-18 wherein the emitted colors are recognizable from the back of the security thread)

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Regarding claim 14 modified Boehm discloses the regions abut one another with no overlap of colour at the boundaries of the regions. (See Col 4, lines 58-61)

Regarding claim 15 Boehm discloses the fibre is cut from a larger fibre. (See Col 4, lines 56-60)

Regarding claim 16 Boehm discloses wherein a varnish is applied to the outer surface. (See carrier material Col 5, lines 4-18)

Regarding claim 40 modified Boehm discloses a plurality of regions having printing visible on front and rear sides of said fibre, wherein said regions are coloured and the colours are visible only under ultra-violet light. (See Col 3, lines 60-67)

8. Claims 8-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Boehm (US 4,897,300) as applied to claim 1 above, in view of Tillotson (US 3, 898, 035) in view of Tam et al. (US 7,122,248).

Regarding claims 8-12 Boehm discloses all of the claim limitations as set forth above but the reference does not specifically disclose the regions are arranged in a pseudo-random pattern.

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Tillotson discloses a method for coloring yarn continuously in sheets having a more regular control of the color of dyed yarns, as well as the lateral and longitudinal distribution of colored portions of the yarn. (See Abstract and Col 1, lines 58-62)

Tillotson also teaches a method of producing random or pseudo-random dyed yarn in a web, or ordered dyed yarns in a web using one or more colors. (See Col 1, lines 63-68)

Further disclosed is the production of yarn dyed or printed with a predetermined pattern of any desired configuration using one or more colors. (See Col 2 lines 1-3) It would have been prima facie case obviousness to one of ordinary skill in the art at the time of the invention to modify the number of colored regions of the dyed yarn as well as the length of each region in order to produce a yarn of sufficient longitudinal distribution. It is noted that yarn is recited by the Webster's Dictionary as a fine cord of twisted fibers. Tam et al. discloses the security fibers are formed into security threads by conventional fiber processes such as twisting, cabling, braiding, texturizing and heat setting. (See Col 7, lines 21-26)

As Boehm and Tillotson are both directed to the coloring of fibrous material, the art is analogous. Therefore, one of ordinary skill in the art would have been easily motivated to utilize the printing technique of Tillotson on the security threads of Boehm in order to modify the colored portions successions as suggested in Boehm.

9. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Boehm (US 4,897,300) as applied to claim 1 above, in view of Schrell et al. (US 5,770,110).

Regarding claim 17 Boehm discloses all of the claim limitations as set forth above but the reference does not specifically disclose the fiber is manufactured from paper.

Schrell et al. discloses luminescent cellulose fibers. (See Col 1, lines 1-2) Schrell et al. discloses regenerated cellulose is generally colored by dyeing with water-soluble dyes or vat dyes by the methods customary in textile dyeing for staples, yarns, wovens and knits. (See Col 1, lines 3-5) Schrell et al. discloses the fiber obtained, which has no self-color, has a red luminescence color on irradiation with light of wavelength 254 nm. (See Example 1)

As Boehm and Schrell et al. are both directed to fibers which achieve luminescence under ultraviolet light, the art is analogous. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to utilize the regenerated cellulose as taught by Schrell as the component for the fibers as disclosed by Boehm in order to provide an entirely expected fiber product which is fluorescence in ultra-violet light. (See Example 1)

### ***Conclusion***

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to ALTREV C. SYKES whose telephone number is

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(571)270-3162. The examiner can normally be reached on Monday-Thursday, 8AM-5PM EST, alt Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Larry Tarazano can be reached on 571-272-1515. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/D. Lawrence Tarazano/  
Supervisory Patent Examiner, Art Unit 1794

/ACS/  
Examiner  
10/20/09